

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in this application.

Listing of Claims:

1-10. (Canceled)

11. (Currently Amended) A method for suppressing boron penetration of a gate oxide during the manufacture of an integrated circuit, comprising:

providing a substrate;

forming a plurality of isolation regions in the substrate;

forming a layer of gate oxide over the substrate and the isolation regions;

depositing a layer of silicon material over the layer of gate oxide;

~~implanting boron ions into the silicon material layer to form an implanted silicon layer;~~

~~implanting one of helium, neon, krypton or xenon ions of an inert gas into the implanted silicon layer to create a strain between particles of the silicon layer and the implanted helium, neon, krypton or xenon ions of an inert gas;~~

implanting boron ions into the silicon material layer to form an implanted silicon layer;

patterning the implanted silicon layer and the layer of gate oxide;

activating the implanted boron ions; and

forming source and drain regions in the substrate.

12. (Currently Amended) The method of claim 11, wherein the dosage of the helium, neon, krypton or xenon ions of an inert gas is higher than 10^{13} ions per cm^2 .

13. (Original) The method of claim 11, wherein the plurality of isolation regions are formed by using a local oxidation of silicon process.

14. (Original) The method of claim 11, wherein the plurality of isolation regions are formed by using a shallow trench isolation process.

15. (Currently Amended) The method of claim 11, wherein the step of implanting ~~one of helium, neon, krypton or xenon~~ the ions of an inert gas is performed at energy of less than 100 KeV.

16. (Original) The method of claim 11, wherein the dosage of the boron ions is at least 10^{13} ions per cm^2 .

17. (Original) The method of claim 11, wherein the step of implanting the boron ions is performed at energy of less than approximately 80 KeV.

18. (Currently Amended) A method for manufacturing a semiconductor device, comprising:
providing a substrate;
forming a plurality of isolation regions in the substrate;
forming a layer of gate oxide over the substrate and the isolation regions;
forming a layer of semiconducting material over the layer of gate oxide;
~~implanting boron ions into the layer of semiconducting material~~;
creating a barrier in the layer of semiconducting material to prevent implanted boron ions from diffusing into the substrate;
implanting boron ions into the layer of semiconducting material to form an implanted semiconductor layer;
patterning and etching the implanted ~~silicon~~ semiconductor layer and the layer of gate oxide;
annealing at least the layer of semiconducting material; and
forming source and drain regions in the substrate.

19. (Currently Amended) The method of claim 18, wherein the step of creating a barrier in the layer of semiconducting material comprises implanting ~~one of helium, neon, krypton or xenon~~ ions of an inert gas into the layer of semiconducting material.

20. (Currently Amended) The method of claim 18 19, wherein the dosage of ~~one of helium,~~

~~neon, krypton or xenon~~ the ions of an inert gas is higher than 10^{13} ions per cm^2 .

21. (Currently Amended) The method of claim 18 19, wherein the step of implanting ~~one of helium, neon, krypton or xenon~~ the ions of an inert gas is performed at energy of less than 100 KeV.

22. (Currently Amended) The method of claim 18, wherein the layer of semiconducting material ~~comprises one~~ is selected from the group consisting of silicon, gallium, ~~or~~ and a combination thereof.

23. (Original) The method of claim 18, wherein the dosage of the boron ions is at least 10^{13} ions per cm^2 .

24. (Original) The method of claim 18, wherein the step of implanting the boron ions is performed at energy of less than approximately 80 KeV.